

CONSTRUCTION OF A SEGMENTAL BRIDGE

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The following ten figures and captions provide a pictorial story of the construction of a segmental bridge in North Vernon, Indiana.

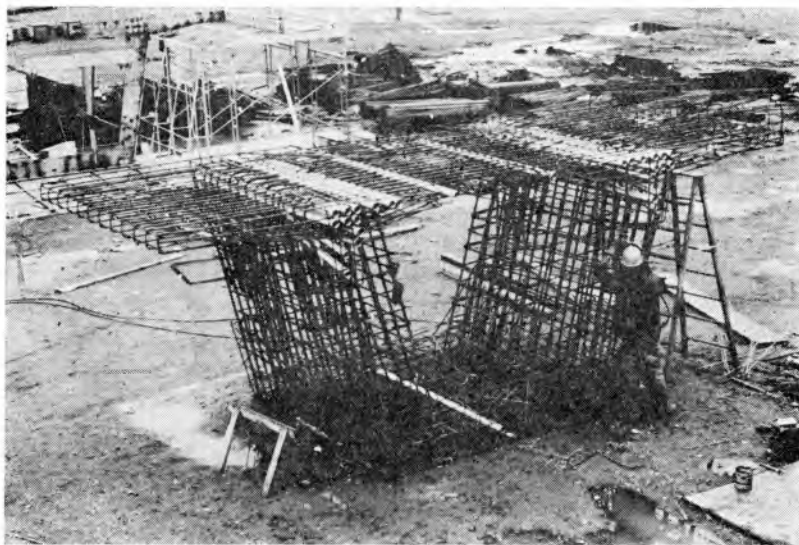
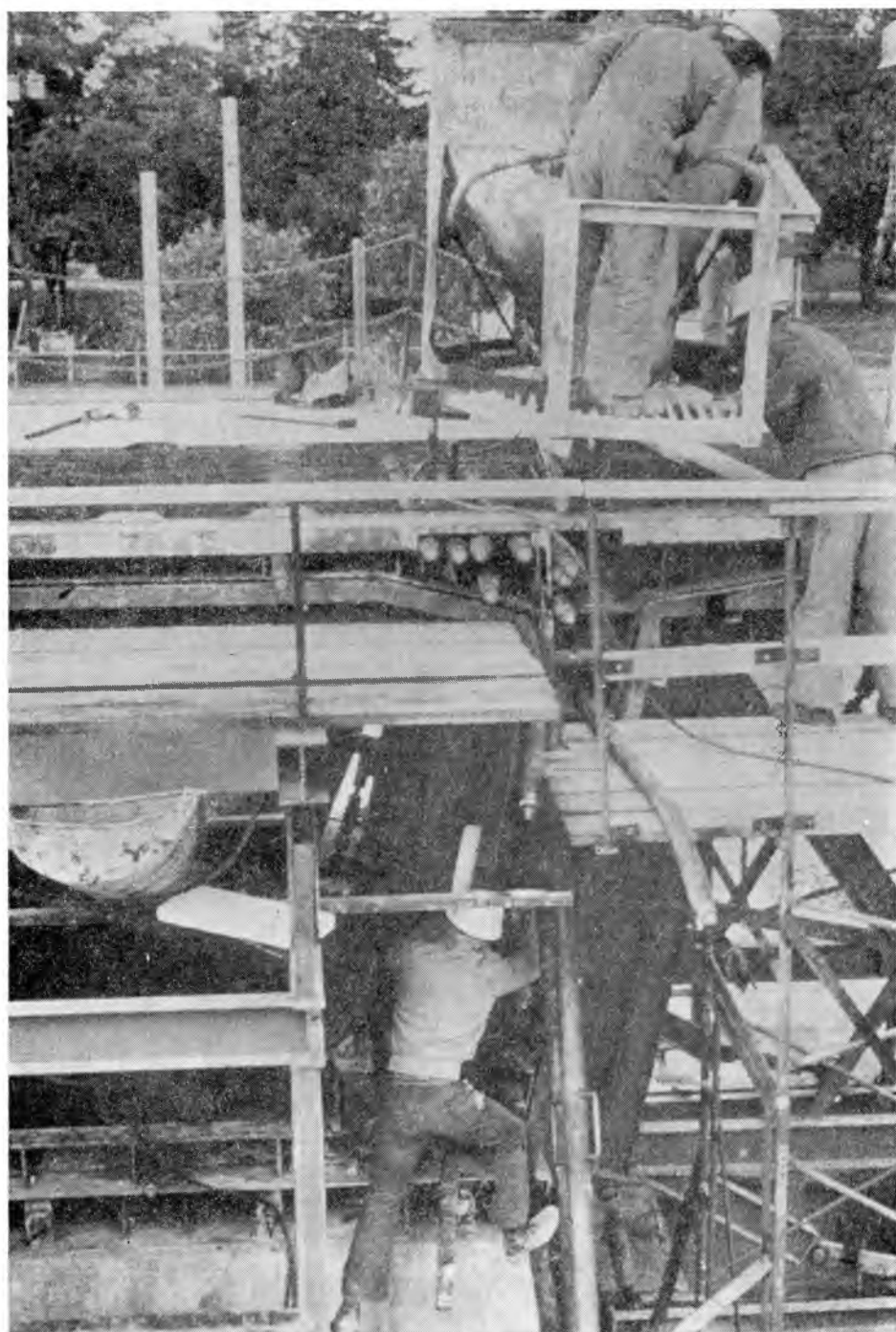


Figure 1. Reinforcing bars being placed for construction of one of the bridge segments. Note the ducts that will carry post-tensioning tendons.

Figure 2. With the reinforcing placed within a metal form, the concrete is poured.



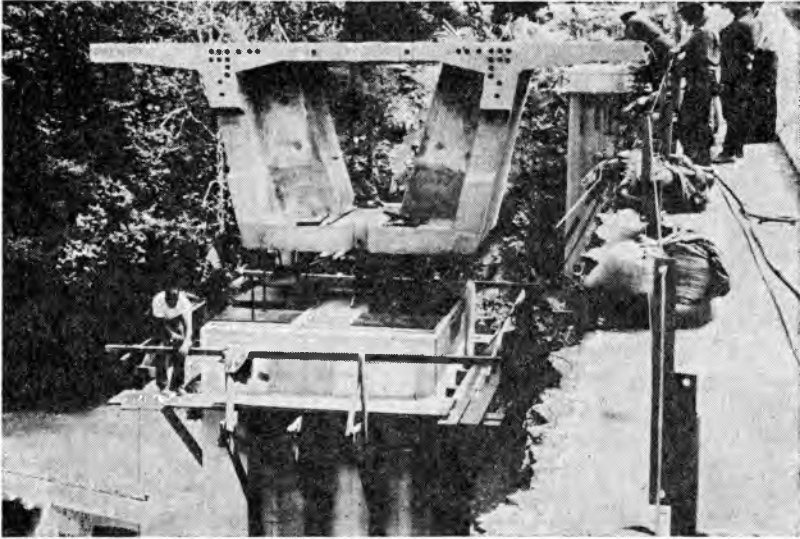
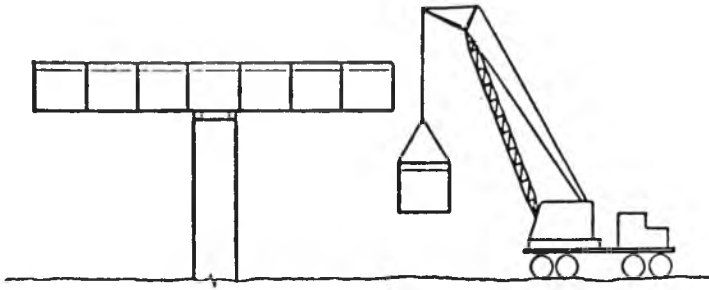
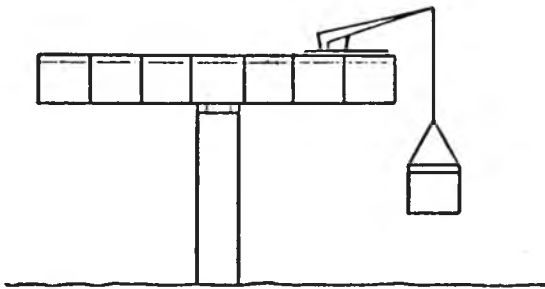


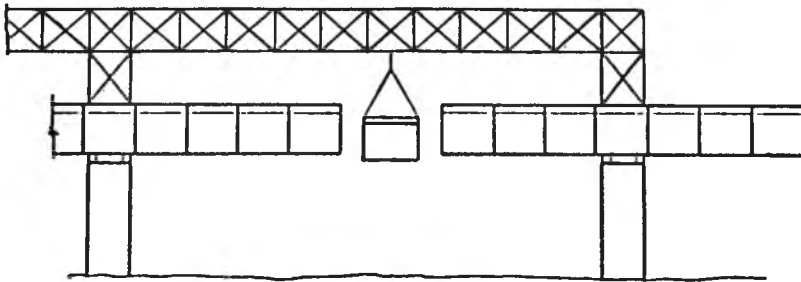
Figure 3. This photo shows the shape of a completed segment. It is being lowered onto a pier to be bolted down.



Cranes From Below



Special equipment on Deck



Overhead Crane

Figure 4. Here are three types of segment handling equipment. The construction procedure shown is the balanced cantilever method and minimizes overturning forces on the pier.

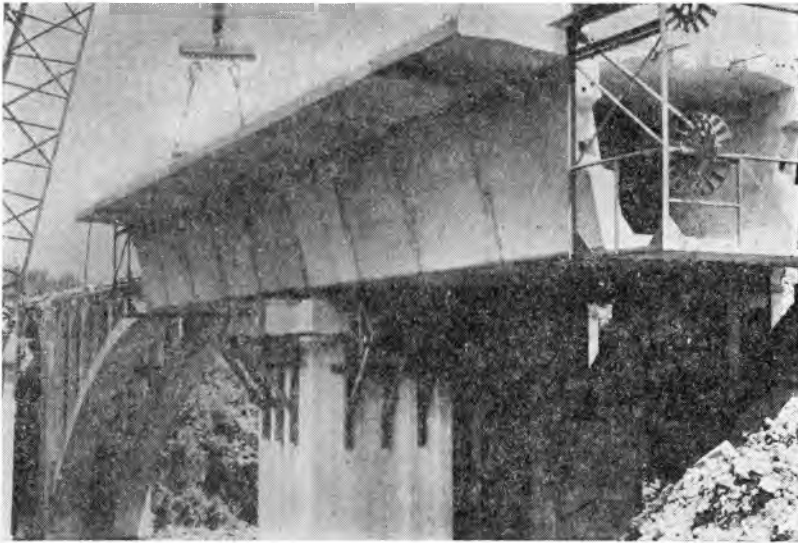


Figure 5. Here are nine segments balanced on a pier—there is a segment on the pier and four on each side. The open center portion may be used to carry utility pipes and wires and provides a walkway for inspections.

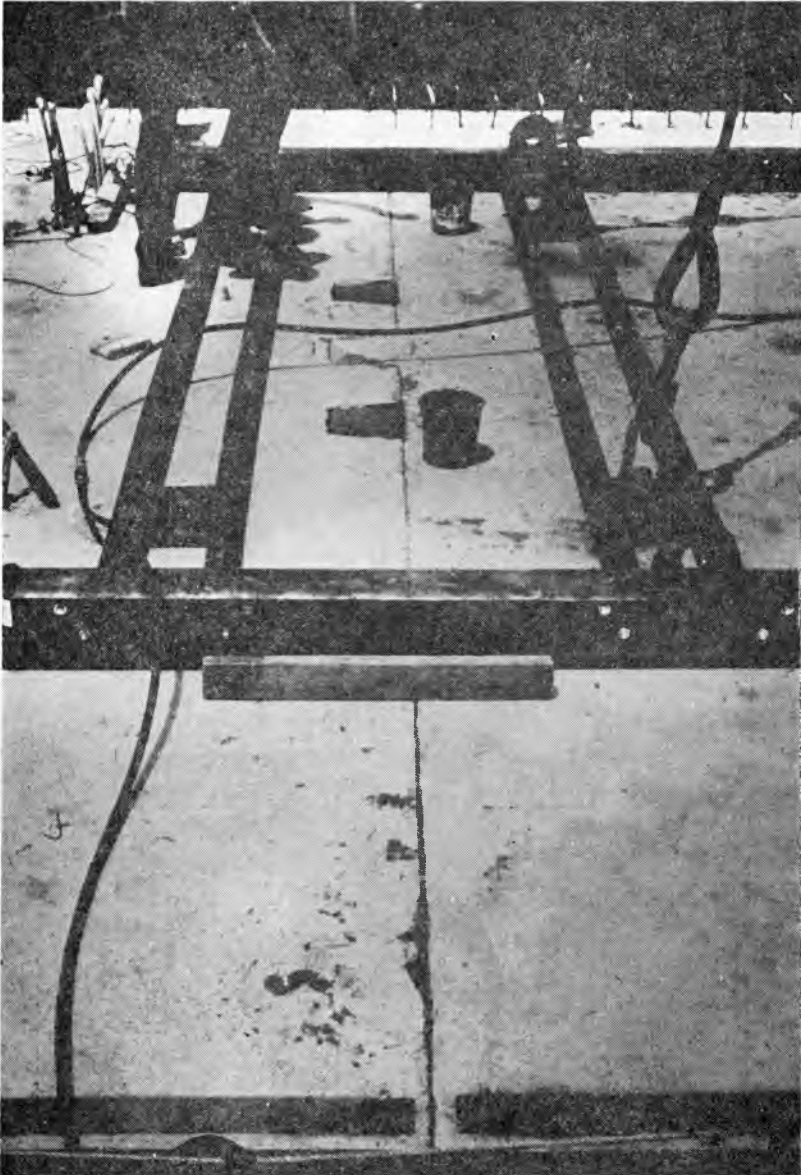


Figure 6. Before the segments are brought together, the joint faces are coated with an epoxy adhesive to give complete uniformity of bearing, prevent any intrusion of moisture and provide a homogeneous member for analysis.

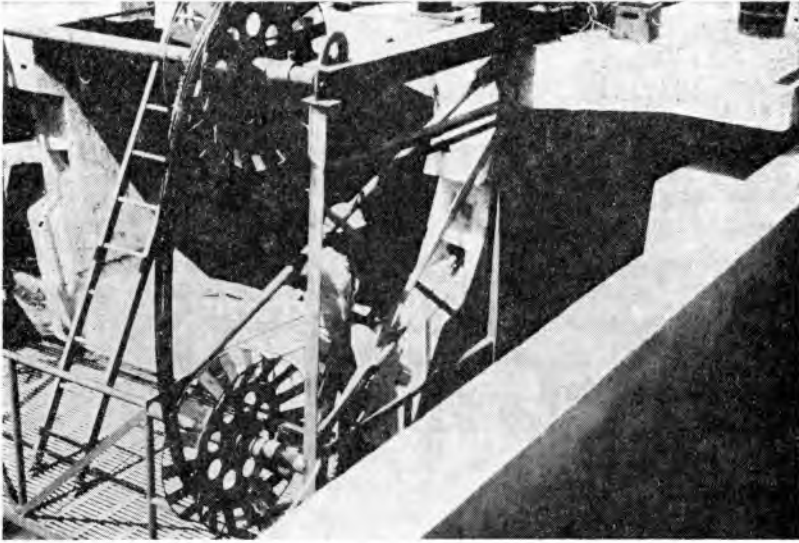


Figure 7. The cage and temporary post-tensioning equipment is used to draw each segment up snugly.

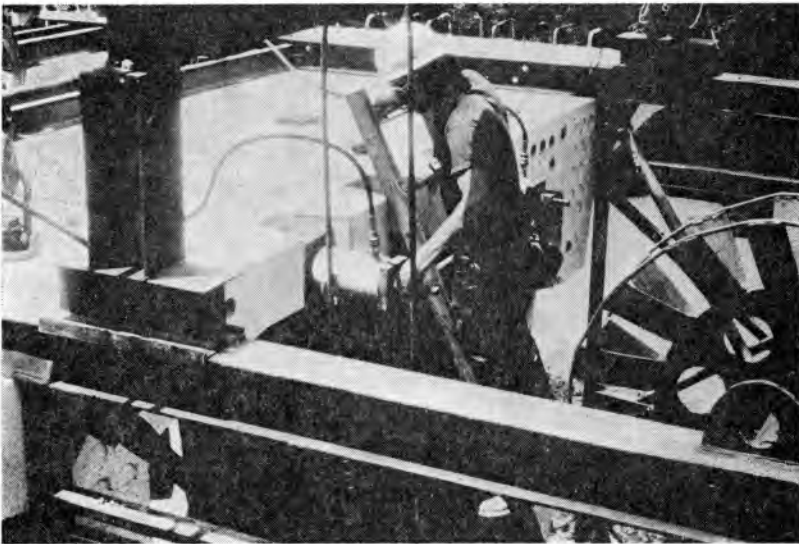


Figure 8. This photo shows the temporary prestressing being applied. This will hold the segment in place until the tendons are installed and stressed.

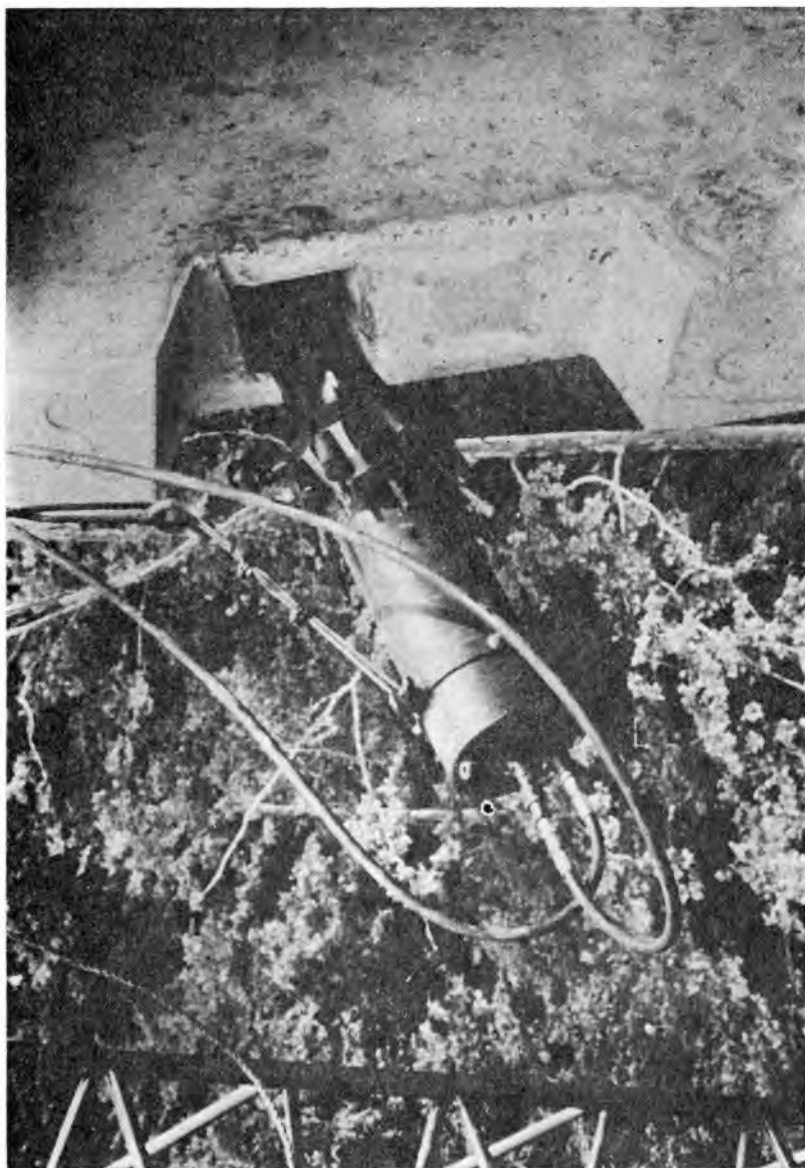


Figure 9. Final post-tensioning of the tendons. The hydraulic jack is jacking against the concrete and drawing up the cable-tendons.

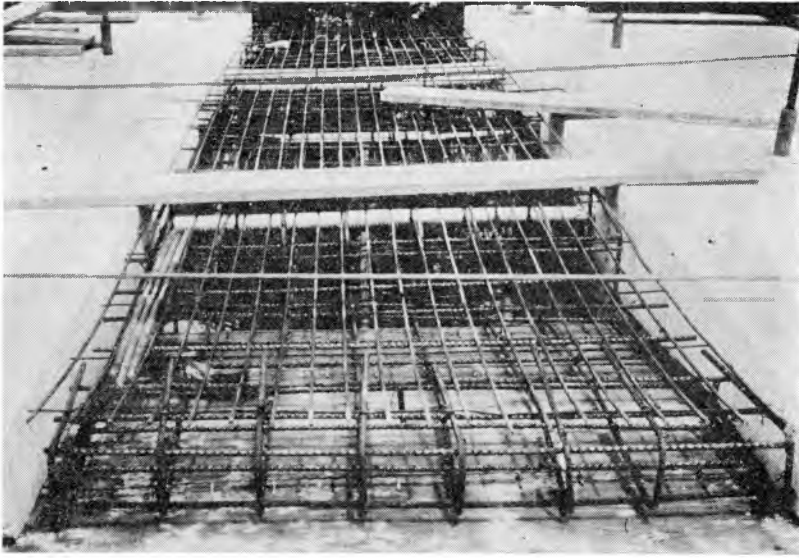


Figure 10. Closing the gap with the midspan splice. Reinforcing bars are placed and the connecting segment is cast in place.